

## SEQUENCE LISTING

<110> LABORATOIRE FRANÇAIS DU FRACTIONNEMENT ET DES  
BIOTECHNOLOGIES  
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<120> USE OF METALLIC CATIONS TO IMPROVE FUNCTIONAL ACTIVITY  
OF ANTIBODIES

<130> D 21 711 NT

<140> PCT/FR2004/002687  
<141> 2004-10-20

<150> FR 03 12228  
<151> 2003-10-20

<160> 2

<170> PatentIn version 3.3

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<212> DNA  
<213> Homo sapiens

<220>  
<223> cDNA sequence of double mutant His310-435Lys

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<210> 2
<211> 475
<212> PRT
<213> Homo sapiens

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<220>
<223> Peptide sequence of double mutant His310-H435Lys.
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```

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
20           25           30

```

```

Pro Gly Arg Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe
35           40           45

```

```

Lys Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Ala Lys Gly Leu
50           55           60

```

```

Glu Trp Val Ala Thr Ile Ser Tyr Asp Gly Arg Asn Ile Gln Tyr Ala
65           70           75           80

```

```

Asp Ser Val Lys Gly Arg Cys Thr Phe Ser Arg Asp Asn Ser Gln Asp
85           90           95

```

```

Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Pro Glu Asp Thr Ala Val
100           105           110

```

Tyr Tyr Cys Ala Arg Pro Val Arg Ser Arg Trp Leu Gln Leu Gly Leu  
115 120 125

Glu Asp Ala Phe His Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser  
130 135 140

Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser  
145 150 155 160

Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp  
165 170 175

Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr  
180 185 190

Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr  
195 200 205

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln  
210 215 220

Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp  
225 230 235 240

Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro  
245 250 255

Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro  
260 265 270

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr  
275 280 285

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn  
290 295 300

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg  
305 310 315 320

Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val  
325 330 335

Leu Lys Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser  
340 345 350

Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys  
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Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp  
 370 375 380

Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe  
 385 390 395 400

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu  
 405 410 415

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe  
 420 425 430

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly  
 435 440 445

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Lys Tyr  
 450 455 460

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
 465 470 475